WHAT IS CLAIMED IS:

1. A magnetic memory device comprising:

a first write wiring formed to extend in a first direction,

a first magneto-resistance element arranged above the first write wiring, and

a passivation film formed thinner than the first write wiring and disposed on the first magneto-resistance element.

2. The magnetic memory device according to claim 1, wherein the passivation film is a DLC (Diamond Like Carbon) film.

3. The magnetic memory device according to claim 1, wherein a total film thickness of the first magneto-resistance element and the passivation film is not larger than 50 nm.

4. The magnetic memory device according to claim 1, wherein the first magneto-resistance element is an MTJ element which includes at least a first fixed layer, a first free layer and a first tunnel insulating film sandwiched between the first fixed layer and the first free layer.

5. The magnetic memory device according to claim 4, wherein the first free layer is formed in contact with the passivation film.

6. The magnetic memory device according to claim 1, further comprising a second write wiring

formed between the first magneto-resistance element and the passivation film to extend in a second direction different from the first direction.

7. The magnetic memory device according to claim 6, wherein the passivation film is a DLC film.

8. The magnetic memory device according to claim 6, wherein the second write wiring is thinner than the first write wiring.

9. The magnetic memory device according to claim 6, wherein a total film thickness of the first magneto-resistance element, the second write wiring and the passivation film is not larger than 50 nm.

10. The magnetic memory device according to claim 1, further comprising:

a first package having a first opening portion formed in a position above the first magneto-resistance element,

a first cover portion which selectively opens and closes the first opening portion, and

a second write wiring formed in the first cover portion and arranged above the first magneto-resistance element when the first cover portion is set in a closed state.

11. The magnetic memory device according to claim 10, wherein the passivation film is a DLC film.

12. The magnetic memory device according to claim 10, wherein a total film thickness of the first

magneto-resistance element and the passivation film is not larger than 50 nm.

13. The magnetic memory device according to claim 10, wherein the first cover portion is of a sliding type to be selectively set into open and closed states.

14. The magnetic memory device according to claim 10, wherein the first cover portion is of a door-type to be selectively set into open and closed states.

15. The magnetic memory device according to claim 10, wherein the first package is formed of a magnetically shielding material.

16. The magnetic memory device according to claim 10, wherein the first cover portion is formed of a magnetically shielding material.

17. The magnetic memory device according to claim 10, further comprising a first mark portion for alignment provided on the first package.

18. The magnetic memory device according to claim 10, wherein the first cover portion is opened at the magnetic transferring time.

19. A magnetic memory device comprising:

a first write wiring formed to extend in a first direction,

a first magneto-resistance element arranged above the first write wiring, and

a passivation film formed of a DLC film on the

first magneto-resistance element.

20. The magnetic memory device according to claim 19, wherein a total film thickness of the first magneto-resistance element and the passivation film is not larger than 50 nm.

21. The magnetic memory device according to claim 19, wherein the first magneto-resistance element is an MTJ element which includes at least a first fixed layer, a first free layer and a first tunnel insulating film sandwiched between the first fixed layer and the first free layer.

22. The magnetic memory device according to claim 21, wherein the first free layer is formed in contact with the passivation film.

23. The magnetic memory device according to claim 19, further comprising a second write wiring formed between the first magneto-resistance element and the passivation film to extend in a second direction different from the first direction.

24. The magnetic memory device according to claim 23, wherein the second write wiring is thinner than the first write wiring.

25. The magnetic memory device according to claim 23, wherein a total film thickness of the first magneto-resistance element, the second write wiring and the passivation film is not larger than 50 nm.

26. The magnetic memory device according to

claim 19, further comprising:

a first package having a first opening portion formed in a position above the first magneto-resistance element,

a first cover portion which selectively opens and closes the first opening portion, and

a second write wiring formed in the first cover portion and arranged above the first magneto-resistance element when the first cover portion is set in a closed state.

27. The magnetic memory device according to claim 26, wherein a total film thickness of the first magneto-resistance element and the passivation film is not larger than 50 nm.

28. The magnetic memory device according to claim 26, wherein the first cover portion is of a sliding type to be selectively set into open and closed states.

29. The magnetic memory device according to claim 26, wherein the first cover portion is of a door type to be selectively set into open and closed states.

30. The magnetic memory device according to claim 26, wherein the first package is formed of a magnetically shielding material.

31. The magnetic memory device according to claim 26, wherein the first cover portion is formed of a magnetically shielding material.

32. The magnetic memory device according to claim 26, further comprising a first mark portion for alignment provided on the first package.

33. The magnetic memory device according to claim 26, wherein the first cover portion is opened at the magnetic transferring time.

34. A magnetic memory device comprising:

a first magneto-resistance element,

a first read wiring formed on the first magneto-resistance element,

a passivation film formed on the first read wiring, and

a second read wiring connected to the first read wiring, disposed below the first read wiring and formed thicker than the first read wiring.

35. The magnetic memory device according to claim 34, wherein a total film thickness of the first magneto-resistance element, the first read wiring and the passivation film is not larger than 50 nm.

36. The magnetic memory device according to claim 34, wherein the passivation film is formed of a DLC film.

37. A magnetic memory device comprising:

a first write wiring formed to extend in a first direction,

a first magneto-resistance element arranged above the first write wiring,

a passivation film formed thinner than the first write wiring and disposed on the first magneto-resistance element,

a first package in which a chip containing the first write wiring, the first magneto-resistance element and the passivation film are sealed, and in which a first opening portion is formed to expose the chip, and

a first cover portion which selectively opens and closes the first opening portion.

38. A magnetic memory device comprising:

a first magneto-resistance element,

a first read wiring formed on the first magneto-resistance element,

a passivation film formed on the first read wiring,

a second read wiring connected to the first read wiring, disposed below the first read wiring and formed thicker than the first read wiring,

a first package in which a chip containing the first magneto-resistance element, the first and second read wirings and the passivation film are sealed, and in which a first opening portion is formed to expose the chip, and

a first cover portion which selectively opens and closes the first opening portion.

39. A magnetic memory device comprising:

a first write wiring formed to extend in a first direction,

a first magneto-resistance element arranged above the first write wiring,

a passivation film formed thinner than the first write wiring and disposed on the first magneto-resistance element,

a first plate portion of a flat shape which is arranged a chip containing the first write wiring, the first magneto-resistance element and the passivation film, and

a first cover portion of a convex shape formed to cover the chip.

40. A magnetic memory device comprising:

a first magneto-resistance element,

a first read wiring formed on the first magneto-resistance element,

a passivation film formed on the first read wiring,

a second read wiring connected to the first read wiring, disposed below the first read wiring and formed thicker than the first read wiring,

a first plate portion of a flat shape which is arranged a chip containing the first magneto-resistance element, the first and second read wirings and the passivation film, and

a first cover portion of a convex shape formed to

cover the chip.

41. A magnetic memory device comprising:

a first write wiring formed to extend in a first direction,

a first magneto-resistance element arranged above the first write wiring,

a passivation film formed thinner than the first write wiring and disposed on the first magneto-resistance element,

a first plate portion of a concave shape which is arranged a chip containing the first write wiring, the first magneto-resistance element and the passivation film, and

a first cover portion of a flat shape formed to cover the chip.

42. A magnetic memory device comprising:

a first magneto-resistance element,

a first read wiring formed on the first magneto-resistance element,

a passivation film formed on the first read wiring,

a second read wiring connected to the first read wiring, disposed below the first read wiring and formed thicker than the first read wiring,

a first plate portion of a concave shape which is arranged a chip containing the first magneto-resistance element, the first and second read wirings and the

passivation film, and

a first cover portion of a flat shape formed to cover the chip.

43. A magnetic memory device comprising:

a first write wiring formed to extend in a first direction,

a first magneto-resistance element arranged above the first write wiring,

a passivation film formed thinner than the first write wiring and disposed on the first magneto-resistance element,

a first movable plate portion which is arranged a chip containing the first write wiring, the first magneto-resistance element and the passivation film and which is moved to lift the chip, and

a first cover portion of a flat shape formed to cover the chip.

44. A magnetic memory device comprising:

a first magneto-resistance element,

a first read wiring formed on the first magneto-resistance element,

a passivation film formed on the first read wiring,

a second read wiring connected to the first read wiring, disposed below the first read wiring and formed thicker than the first read wiring,

a first movable plate portion which is arranged

a chip containing the first magneto-resistance element, the first and second read wirings and the passivation film and which is moved to lift the chip, and

a first cover portion of a flat shape formed to cover the chip.

45. A data copying device comprising:

a magnetic transfer processing section which magnetically transfers first data of a first magnetic memory to a second magnetic memory and writes second data into the second magnetic memory, and

an input/output section which inputs and outputs an instruction of the magnetic transfer processing section.

46. The data copying device according to claim 45, further comprising a control section which controls the first and second magnetic memories according to the instruction.

47. The data copying device according to claim 45, further comprising:

a communication control section which connects the data copying device to a network,

a download processing section which downloads the first data by use of the communication control section, and

a storage processing section which writes the downloaded first data into the first magnetic memory.

48. The data copying device according to claim 47,

further comprising a memory section into which the downloaded first data is written before the downloaded first data is written into the first magnetic memory.

49. The data copying device according to claim 47, wherein the first data is inverted data of the second data.

50. The data copying device according to claim 47, wherein the first magnetic memory has coercive force larger than the second magnetic memory.

51. The data copying device according to claim 50, wherein the first magnetic memory includes a first magneto-resistance element, the second magnetic memory includes a second magneto-resistance element and a surface area of the first magneto-resistance element is larger than a surface area of the second magneto-resistance element.

52. The data copying device according to claim 50, wherein the first magnetic memory includes a first magneto-resistance element, the second magnetic memory includes a second magneto-resistance element and an aspect ratio of the first magneto-resistance element is larger than an aspect ratio of the second magneto-resistance element.

53. The data copying device according to claim 50, wherein the first magnetic memory includes a first magneto-resistance element which has at least a first fixed layer, a first free layer and a first tunnel

insulating film sandwiched between the first fixed layer and the first free layer, the second magnetic memory includes a second magneto-resistance element which has at least a second fixed layer, a second free layer and a second tunnel insulating film sandwiched between the second fixed layer and the second free layer, and a film thickness of the first free layer is larger than a film thickness of the second free layer.

54. The data copying device according to claim 47, wherein the first magnetic memory includes a first magneto-resistance element which has at least a first fixed layer, a first free layer and a first tunnel insulating film sandwiched between the first fixed layer and the first free layer, the second magnetic memory includes a second magneto-resistance element which has at least a second fixed layer, a second free layer and a second tunnel insulating film sandwiched between the second fixed layer and the second free layer, and the first and second free layers are set close to each other by use of the control section with the first and second free layers facing each other at the magnetic transferring time.

55. A data copying system comprising:

a data copying device, and

a server connected to the data copying device via a network and having a database,

wherein the data copying device includes

a communication control section which connects the data copying device to the server,

a download processing section which downloads first data from the database by use of the communication control section,

a storage processing section which writes the first data into a first magnetic memory,

a magnetic transfer processing section which magnetically transfers the first data written into the first magnetic memory to a second magnetic memory and writes second data into the second magnetic memory, and

an input/output section which inputs and outputs instructions of the communication control section, the download processing section, the storage processing section and the magnetic transfer processing section.

56. The data copying system according to claim 55, further comprising a control section which writes the first data into the first magnetic memory according to an instruction of the storage processing section and writes the second data into the second magnetic memory by magnetic transferring according to an instruction of the magnetic transfer processing section.

57. The data copying system according to claim 55, wherein the data copying device further includes a memory section into which the downloaded first data is written before the downloaded first data is written into the first magnetic memory.

58. The data copying system according to claim 55, wherein the first data is inverted data of the second data.

59. The data copying system according to claim 55, wherein the first magnetic memory has larger coercive force than the second magnetic memory.

60. The data copying system according to claim 59, wherein the first magnetic memory includes a first magneto-resistance element, the second magnetic memory includes a second magneto-resistance element and a surface area of the first magneto-resistance element is larger than a surface area of the second magneto-resistance element.

61. The data copying system according to claim 59, wherein the first magnetic memory includes a first magneto-resistance element, the second magnetic memory includes a second magneto-resistance element and an aspect ratio of the first magneto-resistance element is larger than an aspect ratio of the second magneto-resistance element.

62. The data copying system according to claim 59, wherein the first magnetic memory includes a first magneto-resistance element which has at least a first fixed layer, a first free layer and a first tunnel insulating film sandwiched between the first fixed layer and the first free layer, the second magnetic memory includes a second magneto-resistance element

which has at least a second fixed layer, a second free layer and a second tunnel insulating film sandwiched between the second fixed layer and the second free layer, and a film thickness of the first free layer is larger than a film thickness of the second free layer.

63. The data copying system according to claim 59, wherein the first magnetic memory includes a first magneto-resistance element which has at least a first fixed layer, a first free layer and a first tunnel insulating film sandwiched between the first fixed layer and the first free layer, the second magnetic memory includes a second magneto-resistance element which has at least a second fixed layer, a second free layer and a second tunnel insulating film sandwiched between the second fixed layer and the second free layer, and the first and second free layers are set close to each other by use of the control section with the first and second free layers facing each other at the magnetic transferring time.

64. A recording medium which stores a data copying program readable by a computer, the data copying program causing the computer to execute a process, the process comprising:

connecting a data copying device to a server via a network,

selecting first data from a database of the server,

downloading the first data into the data copying device,

writing the downloaded first data into a first magnetic memory,

setting a second magnetic memory in the data copying device, and

setting the first and second magnetic memories close to each other to magnetically transfer the first data to the second magnetic memory and write second data into the second magnetic memory.

65. A recording medium which stores a data copying program readable by a computer, the data copying program causing the computer to execute a process, the process comprising:

setting a first magnetic memory written first data in a data copying device,

setting a second magnetic memory in the data copying device, and

setting the first and second magnetic memories close to each other to magnetically transfer the first data to the second magnetic memory and write second data into the second magnetic memory.

66. The recording medium according to claim 64, wherein the first data is inverted data of the second data.

67. The recording medium according to claim 64, wherein the first magnetic memory has larger coercive

force than the second magnetic memory.

68. The recording medium according to claim 64, wherein the first magnetic memory includes a first magneto-resistance element which has at least a first fixed layer, a first free layer and a first tunnel insulating film sandwiched between the first fixed layer and the first free layer, the second magnetic memory includes a second magneto-resistance element which has at least a second fixed layer, a second free layer and a second tunnel insulating film sandwiched between the second fixed layer and the second free layer, and a magnetic transferring operation is performed while the first and second free layers are being set close to each other with the first and second free layers facing each other.

69. A data copying method comprising:

connecting a data copying device to a server via a network,

selecting first data from a database of the server,

downloading the first data into the data copying device,

writing the downloaded first data into a first magnetic memory,

setting a second magnetic memory in the data copying device, and

setting the first and second magnetic memories

close to each other to magnetically transfer the first data to the second magnetic memory and write second data into the second magnetic memory.

70. The data copying method according to claim 69, further comprising writing the first data into a memory section of the data copying device before the first data is written into the first magnetic memory.

71. A data copying method comprising:

setting a first magnetic memory written first data in a data copying device,

setting a second magnetic memory in the data copying device, and

setting the first and second magnetic memories close to each other to magnetically transfer the first data to the second magnetic memory and write second data into the second magnetic memory.

72. The data copying method according to claim 69, wherein the first data is inverted data of the second data.

73. The data copying method according to claim 69, wherein the first magnetic memory has larger coercive force than the second magnetic memory.

74. The data copying method according to claim 73, wherein the first magnetic memory includes a first magneto-resistance element, the second magnetic memory includes a second magneto-resistance element and a surface area of the first magneto-resistance element

is larger than a surface area of the second magneto-resistance element.

75. The data copying method according to claim 73, wherein the first magnetic memory includes a first magneto-resistance element, the second magnetic memory includes a second magneto-resistance element and an aspect ratio of the first magneto-resistance element is larger than an aspect ratio of the second magneto-resistance element.

76. The data copying method according to claim 73, wherein the first magnetic memory includes a first magneto-resistance element which has at least a first fixed layer, a first free layer and a first tunnel insulating film sandwiched between the first fixed layer and the first free layer, the second magnetic memory includes a second magneto-resistance element which has at least a second fixed layer, a second free layer and a second tunnel insulating film sandwiched between the second fixed layer and the second free layer, and a film thickness of the first free layer is larger than a film thickness of the second free layer.

77. The data copying method according to claim 69, wherein the first magnetic memory includes a first magneto-resistance element which has at least a first fixed layer, a first free layer and a first tunnel insulating film sandwiched between the first fixed layer and the first free layer, the second magnetic

memory includes a second magneto-resistance element which has at least a second fixed layer, a second free layer and a second tunnel insulating film sandwiched between the second fixed layer and the second free layer, and a magnetic transferring operation is performed while the first and second free layers are being set close to each other with the first and second free layers facing each other.